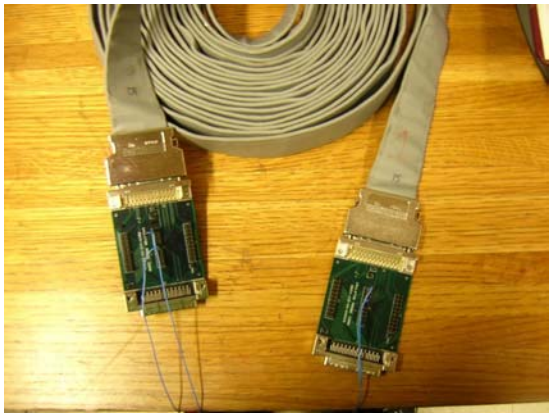
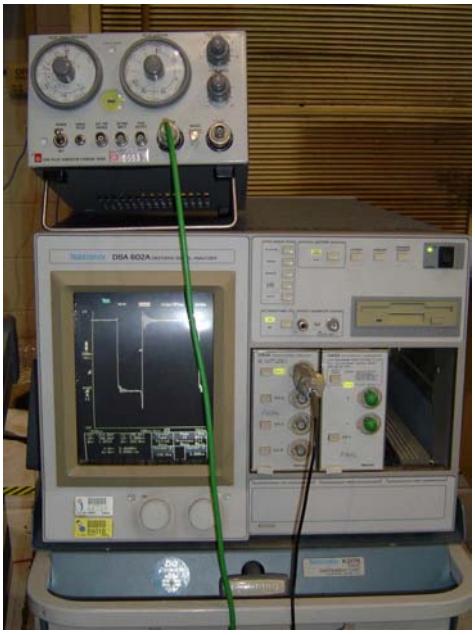
Hi Nikos, Mark,

I'm going to give you a brief summarize of today's day:
I've got Fermilab about afternoon (~1:30pm) and I was working on the cabling attenuation:
These are the cables we have:

Pleated foil cable and BLS cable

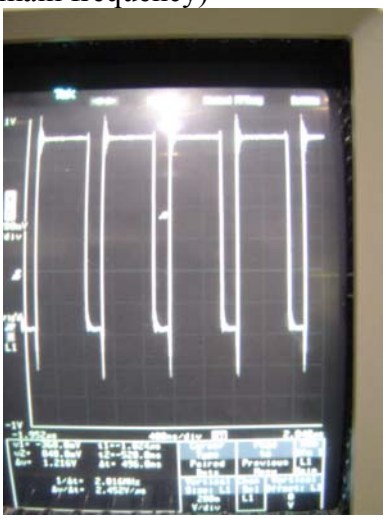


The input signal:



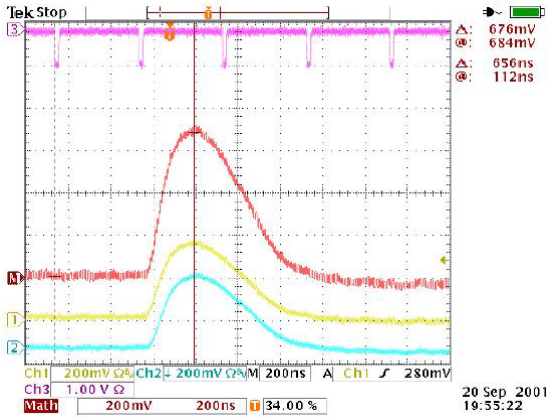
Setup

The input signal (~1MHz the main frequency)



908+-4 ns = (684 + 224) ns
1.22 +- 0.02 V

This signal is a good start considering that the signal coming from the calorimeter are is a "bump" that lasts for about 750 ns. The rise time is about 150 ns. The top (e.g. >90 or 95% of peak) lasts for about 100 nsec. The fall time is about 500 nsec. Then frequencies components of interest start at about 1 MHz and go up to 15 or 20 MHz.



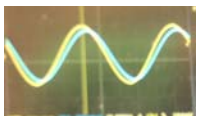
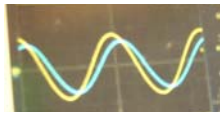
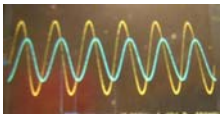
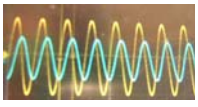
Typical BLS signal:

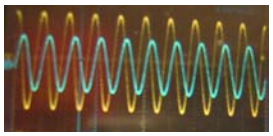
At this early point I started with some unexpected problems; I'm still working on them. There is a strong impedance coupling between the input signal and the pleated foil cable and also strongly depending with the frequency (>1MHZ) as I'll show with sine signals.
An easy conclusion is:
The pulse generator has an output impedance of 50 Ohm which match with the cable impedance.
After a small investigation, the cable we have is cable 3M type 90201/68 customized by Fermilab
http://d0server1.fnal.gov/users/utes/webpage/svxfiles/sequencer_cables_spec_r3.pdf

Which has a characteristic impedance of ~50 Ohm:
http://multimedia.mmm.com/mws/mediawebserver.dyn?_____iGSLO_Uc0_mc0___fmCkVabaGL-

The problem is that all the pulser generators we have have an output impedance of 50 Ohm because it is the standard. I'm going to talk with Johnny about this point.

OK some results with the things we have:

Frequency [kHz]	Attenuation	Phase [degree]	
500.5 +- 0.5	0.9 +- ?	18 +- ?	
1000.0 +- 0.5	0.79	33.5	
2000 +- 2	0.65	53.7 +- 0.7	
3000 +- 5	0.55	69.0 +- 0.5	

4000 +- 10	0.54	80 +- 2	
5000 +- 10	0.56	94 +- 2